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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/348,320 07/07/99 PIERONI

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MORLAND C FISHER
2030 MAIN STREET SUITE 1050
IRVINE CA 92614

EXAMINER

GARBER, C

ART UNIT

PAPER NUMBER

2856

DATE MAILED:
08/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/348,320

Applicant(s)

PIERONI ET AL.

Examiner

Charles D. Garber

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) 2,4-18 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 4-18 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 7/20/2001 have been fully considered but they are not persuasive.

Regarding Applicant's argument with respect to claims 1, 3, 19, 21-24 that the Brayman reference teaching of nitrogen as a trace gas whereas instant invention uses nitrogen mixed with oil, Examiner directs Applicant's attention to column 8 beginning on line 12 where the reference explains that nitrogen is not a trace gas but a carrier gas for halogen gas which alone is detectable by the trace gas detector. The instant invention uses the nitrogen in a similar manner, as an inert carrier for the visibly detectable oil smoke.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Applicant argues that the Malcosky reference which teaches monitoring pressure within a tracer gas outlet and discharging the gas to atmosphere if the pressure becomes too great and is combined with the Pieroni et al. reference does not use the same amalgam of trace and carrier and therefore cannot be combined with Seelback which teaches condensing out

smoke particles before discharge to the atmosphere. Examiner considers it appropriate to use the Malcosky and Seelback references, even though the references are dealing with different gaseous substances, as each reference is solving a different problem independent of the particular amalgam of gases. Malcosky provides advantageous teachings solving the problem of over-pressurization in a system delivering gaseous carrier and trace from a reservoir to a system undergoing leak check. Seelback provides advantageous teaching solving the problem of venting smoky gas to the atmosphere by first condensing out the smoke particles. The fact that the references do not use the same gases does not cloud the advantages that each suggests from the art areas of tracer leak checking and smoke handling.

In response to applicant's argument that there is no suggestion to combine the Ireland reference with respect to claim 24 Examiner disagrees. The Ireland reference provides a strong motivation to combine a pressure sensing apparatus with a resistance heater for safety purposes. Ireland is concerned that when flow across the heater element stops, for example when the flow is restricted or blocked for some reason, the heater element may overheat and fail or cause a fire. Ireland is not specific about the location of the pressure sensor, only that it be able to ascertain if the flow is stopped and the resultant pressure difference across the heating element insufficient to carry away excess heat. Perhaps the motivation supplied by Ireland is not the same as that of the instant invention, it is though a motivation in its own right.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieroni et al. in view of Gouge and Brayman et al.

Regarding claims 1, 19 and 21, Pieroni et al. disclose a smoke producing apparatus and operation for detecting leaks in a fluid system including a smoke producing chamber 1, a fluid supply 2, a heating grid 4 shown in figures 1 and 5 to be within the chamber, a gas inlet tube 16 with orifice 18 for blowing gas and fluid mixture against the heating grid energized by DC current (column 3 line 66 to column 4 line 10), an air outlet 14 for removing the exiting smoke (column 3 lines 16-23), and a source of air 25 which is non-flammable.

Pieroni et al. however does not expressly teach the gas is Nitrogen.

Gouge discloses a device and method for smoke testing of gas furnace heat exchangers (title) with many of the same limitations as the instant invention including "the generator having: a smoke chamber housing having upper and lower portions; at least one heating element in the upper portion of the smoke chamber housing; a pump which supplies a gas to the smoke chamber housing; a liquid which fills the lower portion of the smoke chamber housing, wherein the at least one heating element is suspended above the liquid; an applicator of liquid to the at least one heating element; and a smoke vent in the upper portion of the smoke chamber housing" (abstract) "wherein said liquid comprises oil" (claim 4) that teaches the gas is "pressurized carrier gas" (claim 1). Gouge however does not specify a suitable carrier gas. Brayman et al. disclose an apparatus and method for leak testing automotive wheel rims. Brayman et al. teach "...any of a range of trace gas concentration ... mixed with suitable carrier gas such as air, or nitrogen, as required for the particular application, and the particular trace gas sensor utilized" (column 8 lines 12-16).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to advantageously use a carrier gas to carry smoke from a smoke generator as taught by Gouge and that a suitable carrier gas is air or nitrogen as taught by Brayman et al.

As for claim 3, Pieroni et al. further disclose an air inlet tube 16 shown in figure 1 and 5 extending through and above the fluid supply 2 as in the instant invention. The tube also blows a mixture of gas and fluid against the heating grid 4 as in the instant invention (column 3 line 66 to column 4 line 10).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieroni et al. as modified by Gouge and Brayman et al. and applied to claim 19 above and further in view of Malcosky et al.

Pieroni et al. as modified above teaches all the limitations as in the instant invention except for expressly teaching monitoring the pressure within said smoke outlet of said smoke producing chamber and discharging said pressure to the atmosphere when said pressure exceed a predetermined pressure level

Malcosky discloses an apparatus for injecting tracer gas into a pipeline. The reference teaches relief valves 108 or 122 in the lines 104 or 118 carrying tracer compounds to a pipeline 136 under test (see figure 1 and column 9 lines 10-30). Relief valves are well known to discharge pressure at a predetermined pressure level. The claim recitation "monitoring the pressure within said smoke outlet of said smoke producing chamber and discharging said pressure to the atmosphere when said

pressure exceed a predetermined pressure level" is only supported in the specification insofar as pressure check valve 40 of the instant invention will "crack" at about 1 PSI and vent to atmosphere via an orifice. Pressure "monitoring" would ordinarily be associated with some sort of pressure sensing, measuring or displaying means. There was no pressure sensing, measuring or displaying means associated with the disclosed vent so the recitation appears to be directed simply to a relief valve of some sort.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a relief or pressure check valve in order to prevent pressure build up that may effect proper operation of fluid systems as is widely known in the art.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieroni et al. as modified by Gouge, Brayman et al. and Malcowsky et al. and applied to claim 22 above and further in view of Seelback

Pieroni et al. as modified above teach all the limitations as in the instant invention except for expressly teaching an accumulator between the smoke generator outlet and atmosphere, wherein the accumulator condenses and collects the smoke.

Seelback discloses a method and apparatus for smoke treating foodstuffs wherein there is taught a condenser 160 between the smoke chamber 10 and vent 169 for condensing the smoke.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to condense waste smoke so that obscuring smoke is not dumped into the environment.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieroni et al. as modified by Gouge and Brayman et al. and applied to claim 19 above and further in view of Ireland et al.

Pieroni et al. as modified above discloses all the limitations as in the instant invention except for expressly teaching monitoring the pressure of gas, energizing the heating grid when the gas pressure exceeds a predetermined threshold and de-energizing the grid when the gas pressure falls below.

Ireland et al. (Ireland) disclose a heating element for heating fluids, either gases or liquids wherein the element is a wire mesh 1. Ireland teaches "Mesh failure due to flow restriction may be prevented by the use of a pressure actuated switch which only permits current to be supplied to the mesh when the pressure difference across the mesh faces, caused by the flow through the mesh, exceeds a prescribed value." (column 2 lines 25-31) and "A safety device, for example incorporating a pressure switch as described above, could be fitted to shut off the current supply to the heater in the event of a blockage." (column 6 lines 57-60)

It would have been obvious to one having ordinary skill at the time the invention was made to permit current to the heating element when there is sufficient flow for safety and to prevent failure.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (703) 308-6062. The examiner can normally be reached on 6:30 am - 4:pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7725 for regular communications and (703) 308-7725 for After Final communications.

Art Unit: 2856

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

cdg
August 6, 2001


DANIEL S. LARKIN
PRIMARY EXAMINER